IEEE 802.11b
Wireless BroadBand Router

User Guide

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

·On board of airplanes, or

·In an explosive environment, or

·In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause interference, and

2. This device must accept any interference, including interference that may cause undesired operation of this device.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized.

When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.

2. Increase the distance between the equipment and the receiver.

3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

4. Consult the dealer or an experienced radio/TV technician for help.

Export restrictions

This product or software contains encryption code that may not be exported or transferred from the US of Canada without an approved US Department of Commerce export license.

Safety Information

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

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ABOUT THIS GUIDE

Congratulations on your purchase of this IEEE 802.11b Wireless Broadband Router. This integrated access device combines Internet gateway functions with wireless LAN and Fast Ethernet switch. It provides a complete solution for Internet surfing and office resources sharing, and it is easy to configure and operate for every users.

Purpose

This manual discusses how to install the IEEE 802.11b Wireless Broadband Router.

Overview of this User's Guide

Introduction. Describes the Wireless Broadband Router and its features.

Unpacking and Setup. Helps you get started with the basic installation of the Wireless Router.

Identifying External Components. Describes the front panel, rear panel and LED indicators of the Wireless Router.

Connecting the Router. Tells how you can connect the Wireless Router to your xDSL/Cable Modem.

Technical Specifications. Lists the technical (general, physical and environmental, performance and Routers settings) specifications of the Wireless Broadband Router.

INTRODUCTION

With the explosive growth of the Internet, accessing information and services at any time, day or night has become a standard requirement for most people. The era of the standalone PC is waning. Networking technology is moving out of the exclusive domain of corporations and into homes with at least two computers.

This integrated access device combines Internet gateway functions with wireless LAN and Fast Ethernet switch. Designed for the business and home, it saves you the cost of installing a separate modem and ISP line for each computer, while providing ready connection for the users, with or without the network wires.

Broadband network access is also gaining ground. However, allowing more than two computers to access the Internet at the same time means less affordable, higher costs. Thus, there is a need to share one legal IP address over a single Internet connection to link the home with the Internet.

The scarcity of IP addresses and using a shared Internet connection through an Internet sharing device can solve high network access costs. All linked computers can make full use of broadband capabilities over such a device.

This device not only comes equipped with a wide range of features, but also can be installed and configured right out of the box. This device supports a simple local area network and Internet access share, offering great cost savings.

The local area network connects up home computers while also allowing any of the computers to access the Internet, share resources, or play online games—the basis of the family computing lifestyle.

Applications:

Broadband Internet access:

Several computers can share one high-speed broadband connection through wireless or wired (WLAN, LAN and WAN-Internet).

Resource sharing:

Share resources such as printers, scanners and other peripherals.

File sharing:

Exchange data, messages, and distribute files thus making good use of hard disk space.

Online gaming:

Through the local area network, online gaming and e-commerce services can be easily setup.

Firewall:

A built-in firewall function — for security and anti-hack system.

Features:

- High speed data transfer rate
- Supports NAT for share 1 IP address to all LAN user.
- Supports PPPoE and PPTP protocol for Dial-Up ADSL.
- Supports 64/128 bit WEP Encryption
- Supports DHCP Server / Client.
- Supports UPnP (Universal Plug and Play).
- Supports virtual server mapping.
- Supports packet filtering.
- Simple Firewall protection.
- Upgradeable firmware for future function.
- Simple setting using Quick Setup.
- Easy configuration via WEB Browser.

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Wireless Broadband Router.

Unpacking

Open the box of the Wireless Broadband Router and carefully unpack it. The box should contain the following items:

- One Wireless Internet Broadband Router
- One external power adapter
- One CD-Rom with this User's Guide

If any item is found missing or damaged, please contact your local reseller for replacement.

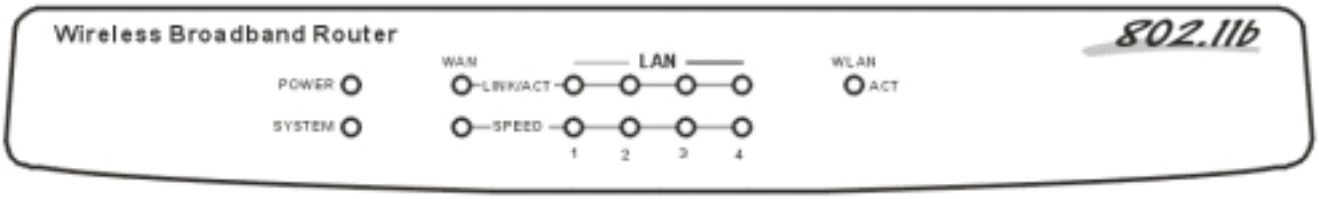
Setup

The setup of the Wireless Broadband Router can be performed properly using the following methods:

- The power outlet should be within 1.82 meters (6 feet) of the Broadband Router.
- Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.
- Make sure that there is proper heat dissipation from and adequate ventilation around the Broadband Router. Do not place heavy objects on the Broadband Router.
- Fix the direction of the antennas. Try to place the Wireless Router in a position that can best cover your wireless network. Normally, the higher you place the antenna, the better the performance will be. The antenna's position enhances the receiving sensitivity.

Front Panel

The figure below shows the front panel of the Wireless Broadband Router.



Wireless Broadband Router Front Panel

POWER

This indicator lights green when the hub is receives power, otherwise it is off.

SYSTEM

This indicator blinks green means the Internet Broadband Router is working successful. Otherwise, this indicator always on or off means the function of the Internet Broadband Router is fail.

Link/ACT (WAN / LAN)

These indicators light green when the LAN/WAN port were connected to an xDSL/Cable modem successfully.

These indicators blink green while the LAN/WAN port were transmitting or receiving data on the xDSL/Cable modem.

Speed (WAN / LAN)

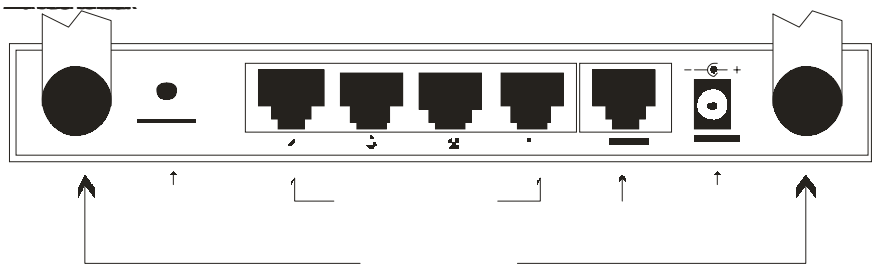
These indicators lights green when these ports were connected to the 100Mbps Fast Ethernet Network, otherwise these indicators remains off while the network were connected to 10Mbps Ethernet Network.

WLAN (ACT)

This indicator lights green when there are wireless devices connected and transmitting data to the Wireless Router.

Rear Panel

The figure below shows the rear panel of the Wireless Broadband Router.



Wireless Broadband Router Rear Panel

Antenna

There are two 2dBi Gain Antenna in the rear panel for wireless connection.

DC IN

Plug the power adapter to this power jack

WAN

In the four port broadband router, there is an RJ-45 10/100Mbps Auto-MDIX port for the WAN that will fit the xDSL/Cable modem's specification need.

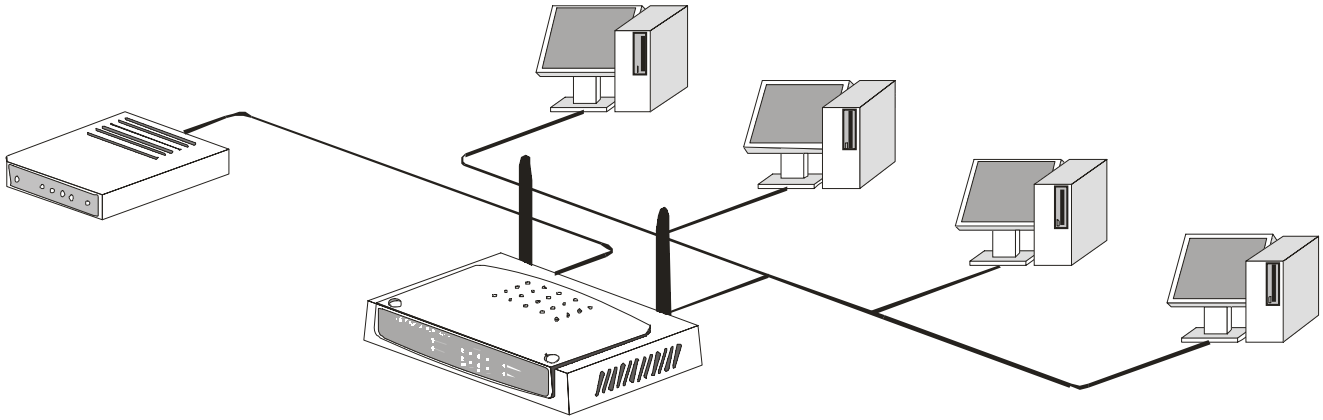
LAN (1-4)

Four RJ-45 10/100Mbps Auto-MDIX ports for connecting to either 10Mbps or 100Mbps Ethernet connections.

RESET

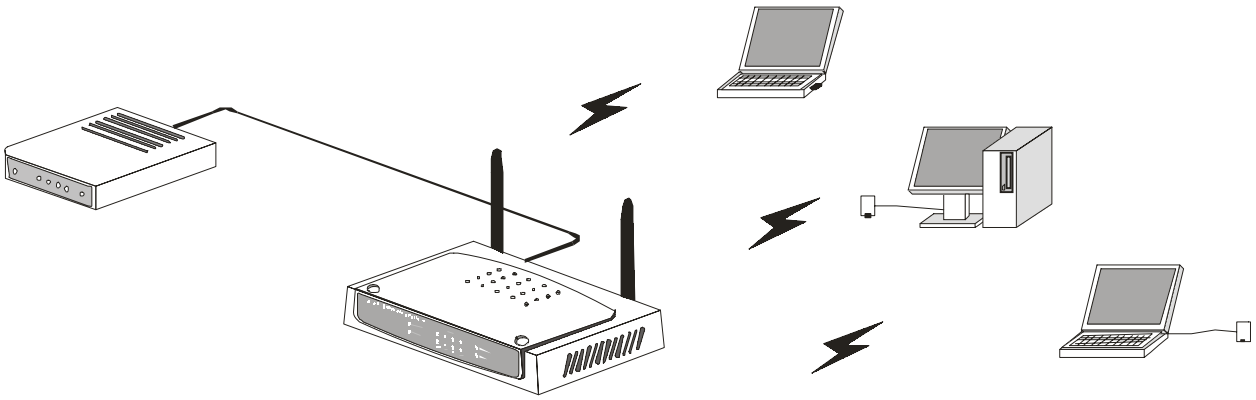
Use a pin-shape item to push to reset this device to factory default settings. It will be useful too when the manager forgot the password to login, but the setting will be back to default setting.

Connect the Router using LAN



1. Plug in one end of the network cable to the WAN port of the Wireless Internet Broadband Router.
2. Plug in the other end of the network cable to the Ethernet port of the xDSL or Cable modem.
3. Use another network cable to connect to the Ethernet card on the computer system, the other end of the cable connects to the LAN port of the Internet Broadband Router. Since the Wireless Broadband Router has four ports, you can connect up to four computers directly to the unit. There you do not have to buy a switch to connect these computers since one Internet Broadband Router functions both as a connection-sharing unit and as a switch.

Connect the Router using Wireless LAN



1. Plug in one end of the RJ45 network cable to the xDSL/Cable Modem.
2. Plug in the other end of the RJ45 network cable to the Wireless Internet Broadband Router WAN port.

Check the installation

The control LEDs of the Wireless Internet Broadband Router are clearly visible and the status of the network link can be seen instantly:

1. With the power source on, once the device is connected to the broadband modem, the Power, CPU, LAN, WLAN and WAN port link LEDs of the Internet Broadband Router will light up indicating a normal status.
2. While the WAN is link up to the ADSL/Cable modem, the WAN port's Link/ACT LED will light up.
3. While the LAN is link up to the computer system, the LAN port's Link/ACT LED will light up.

PC NETWORK TCP/IP SETTING

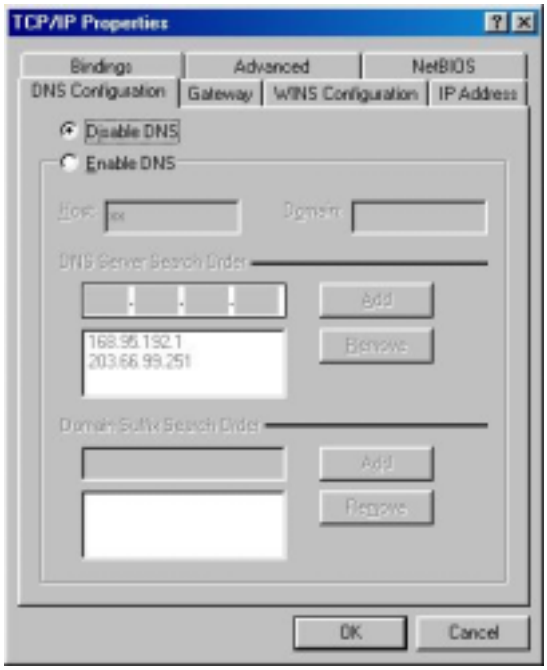
The network TCP/IP settings differ based on the computer's operating system (Win95/98/ME/NT/2000/XP) and are as follows.

Windows 95/98/ME

1. Click on the "**Network neighborhood**" icon found on the desktop.
2. Click the right mouse button and a context menu will be show.
3. Select "**Properties**" to enter the TCP/IP setting screen.
4. Select "**Obtain an IP address automatically**" on the "**IP address**" field.

TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
10 . 1 . 1 . 11
Subnet Mask:
255 . 255 . 255 . 0
OK
Cancel

5. Select “**Disable DNS**” in the “**DNS**” field.

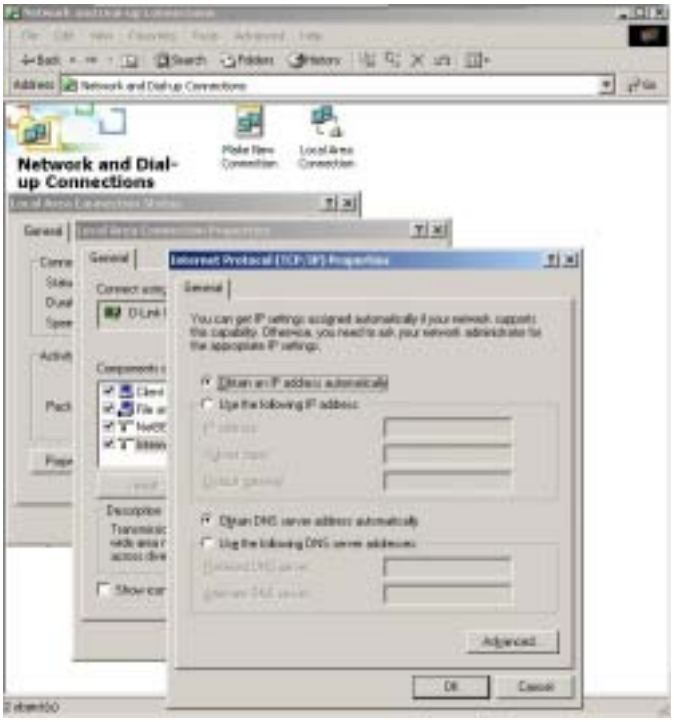


6. Select “**None**” for the “**Gateway address**” field.

Windows 2000

Double click on the "**My computer**" icon on the desktop. When "**My computer**" window opens, open the "**Control panel**" and then open the "**Network dialup connection**" applet. Double click on the "Local area network connection" icon. Select "Properties" to enter the TCP/IP setting window.

1. In the "**Local area network status**" window, click on "**Properties**."
2. In the "**Local area network connection**" window, first select TCP/IP setting and then select "**Properties**."
3. Set both "**IP address**" and "**DNS**" to **Automatic configuration**.



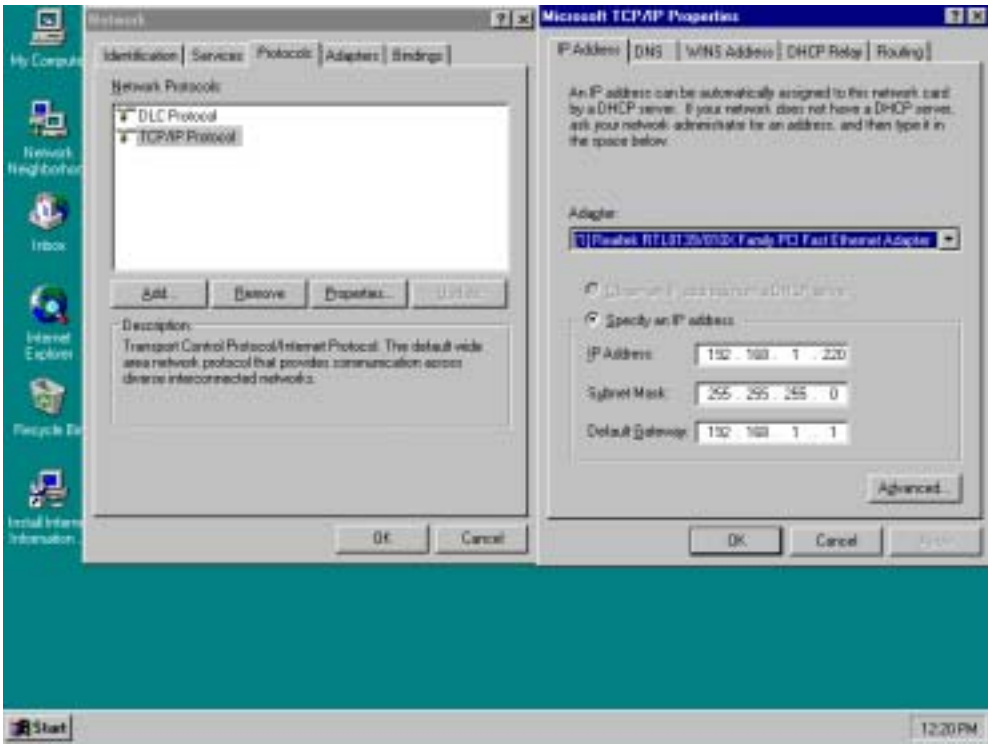
Windows NT4.0

Click on the "**Start**" button located on the lower left corner of the menu bar.

Select "**Settings**" and then "**Control panel**."

In the "**Control panel**" window, select "**Network**" to enter the TCP/IP setting window.

1. Set "**IP address**" to "**Obtain an IP address automatically**."
2. Set "**DNS**" to "**Disable DNS**."

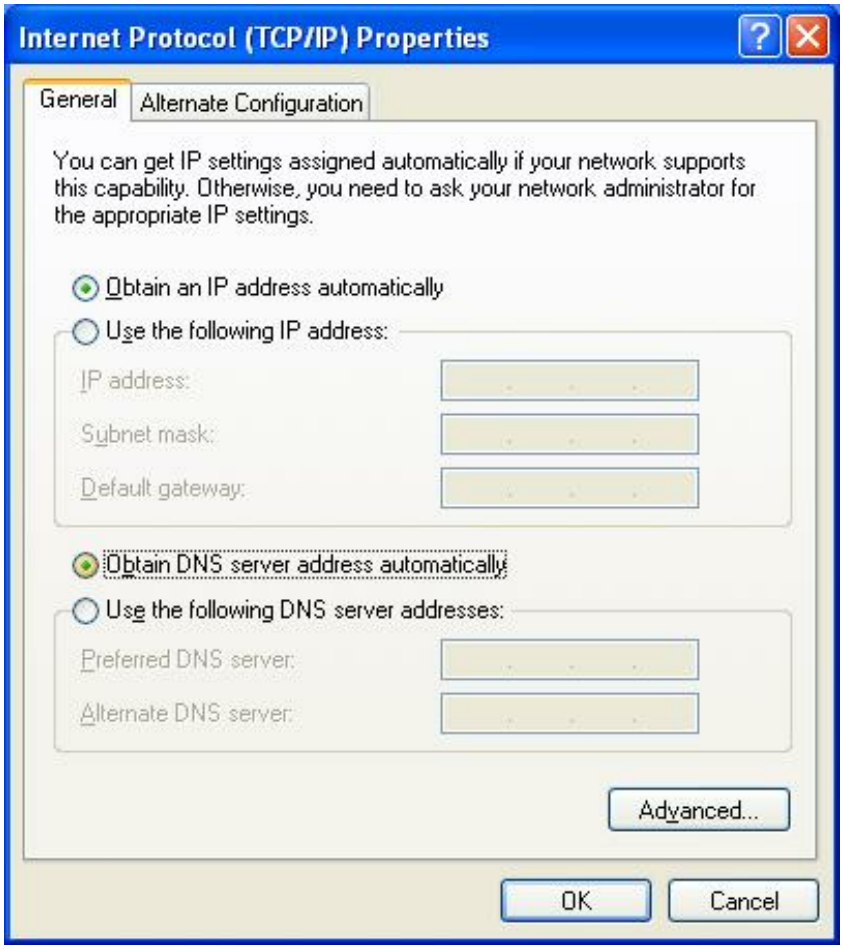


Windows XP

Point the cursor and click the right button on the “My Network Place” icon.

Select “properties” to enter the TCP/IP setting window.

1. Set “**IP address**” to “**Obtain an IP address automatically**.”
2. Set “**DNS**” to “**Obtain DNS server address automatically**.”


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

WIRELESS BROADBAND ROUTER CONFIGURATION

First make sure that the network connections are functioning normally.

This Wireless Broadband Router can be configured using Internet Explorer 4.0 or newer web browser versions.

Login to the Wireless Broadband Router through WLAN

Before configuring the Wireless Broadband Router through WLAN, make sure that the SSID, Channel and the WEP is set properly.

The default setting of the Wireless Broadband Router that you will use:

SSID: default

Channel: 6

WEP Encryption: disable

Login to the Wireless Broadband Router through LAN

Before you configure this device, note that when the Wireless Broadband Router is configured through an Ethernet connection, make sure the host PC must be set on the **IP subnetwork** that can be accessed by the xDSL/Cable modem. For example, when the default network address of the xDSL/Cable modem Ethernet interface is 192.168.1.x, then the host PC should be set at 192.168.1.xxx (where xxx is a number between 2 and 254), and the default subnet mask is 255.255.255.0.

Using the Web Browser

1. Open Internet Explorer 4.0 or above Internet browser.
2. Enter IP address ***http://192.168.1.1*** (the factory-default IP address setting) to the URL web address location.

3. When the following dialog box appears, remain blank (first login) or enter the password and press Login to enter the main configuration window.

Note: If needed to set a password, then refer to the **Administrator Setting**.

4. After entering the password, the main web page comes up, there are two choices for setting, Quick Setup or Advanced Setup, it is recommended that the beginner to use the Quick Setup, it will lead you step by step to configure the Broadband Router.

Quick Setup
The quick setup will allow you to configure your Broadband Router for use with a Cable or DSL modem. Follow the wizard through each step to set up the Broadband Router.
Advanced Setup
The Broadband Router supports advanced functions like hacker attack detection, special application access, a virtual DMZ host, virtual servers, client filtering, and VPN pass-through. Highly recommend you to keep the default settings.
The Broadband Router is a device ideal for home networking and small business users. Most users will be able to use the Broadband Router's default settings. If you have different settings, the Quick Setup will lead you step by step to configure the Broadband Router. Its easy setup will allow you to enjoy risk-free Internet access within minutes.

Quick Setup

In the main web page, select “Quick Setup” to specify the Time Zone, Wireless Settings and the WAN connection type: Cable modem (DHCP), Fixed IP, or Dial-up xDSL (PPPoE).

1-1 Time Zone

To set the time zone in order to synchronize the system clock in the global through the SNTP Server.

1-2 Wireless Settings

To set the SSID, Country (Domain Regulatory), Channel, and WEP Settings of the Wireless Broadband Router.

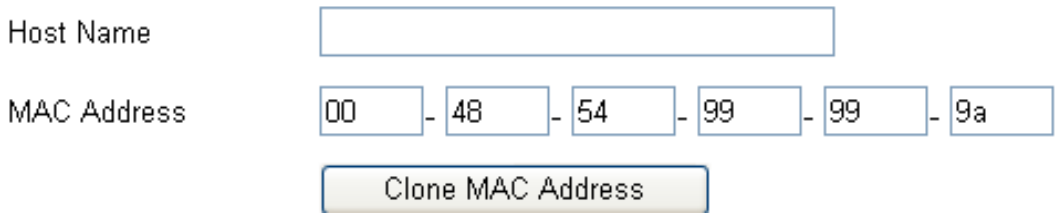
1-3 WAN Connection Type

To select which the WAN connection type will be connected to, point the cursor to the Cable modem (DHCP), Fixed IP, or Dial-up xDSL (PPPoE) to process.

1-3-1 Dynamic IP (Cable modem)

To connect a cable modem with the Broadband Router, check the cable modem with the related user's guide, then the Cable modem will automatically configure itself, the Broadband Router is configured to automatically assign addresses to each PC.

Fill up the MAC Address of the network adapter when the DNS server need a certain address with the network adapter, or press the "Clone MAC Address" button to get the manager's PC MAC Address.



1-3-2 Fixed IP

If the Internet Service Providers assign a fixed IP address, choose this option and enter the assigned IP address, subnet mask, gateway IP and DNS IP addresses for your Broadband Router.

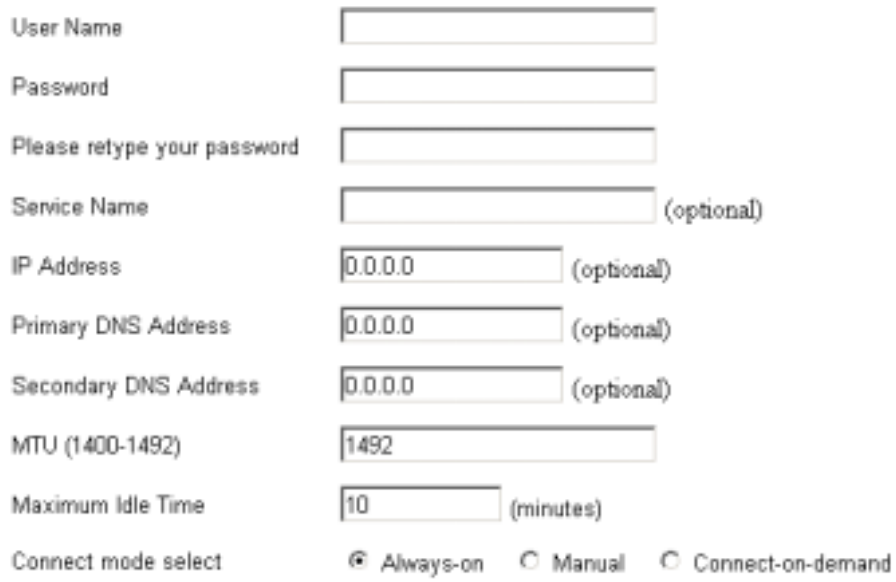
1-3-3 PPPoE (Dial-up xDSL)

If connected to the Internet using a PPPoE (Dial-up xDSL) Modem, the ISP will provide a Password and User Name, then the ISP uses PPPoE. Choose this option and enter the required information, if the ISP provided a Service Name, enter it in the column of the Service Name field, otherwise, leave it blank.

The dialog box in Service Name, IP Address and DNS Address must be filled up when the ISP Provider provide these information to you, if the ISP Provider provides Dynamic IP Address, then you can skip on these dialog box.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1492. By default, MTU is set at 1492.

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). The Connect Mode Selection provide three function, Always on, Manual or Connect-on-demand button to dial up to the ISP when there is a demand needed, select the way of selection to meet the connecting to the ISP.



1-3-4 PPTP

If connected to the Internet using a (PPTP) xDSL Modem, enter the PPTP Account Name, PPTP Password, Host Name, Service IP Address, Your IP Address, Your Subnet Mask required by your ISP in the appropriate fields. If your ISP has provided you with a Connection ID, enter it in the Connection ID field, otherwise, leave it zero.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1460, by default, MTU is set at 1460.

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

1-4 DNS

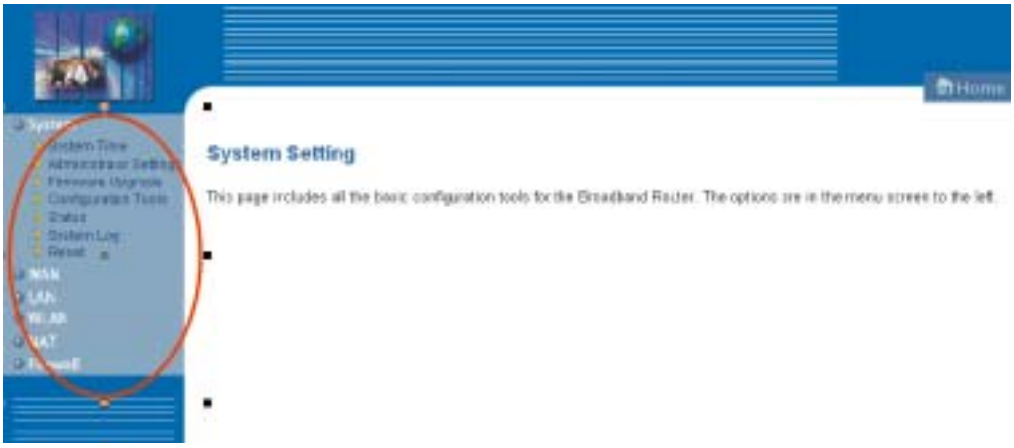
The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses.

If your ISP provided at least one DNS Server IP Address, type that **IP Address** in the Primary DNS address fields. You can type up to another DNS Server IP Addresses. The Router will utilize these for quicker access to functioning DNS Servers.

The Broadband Router supports advanced functions like System setting WAN setting, LAN setting, WLAN setting, NAT Setting and Firewall setting.

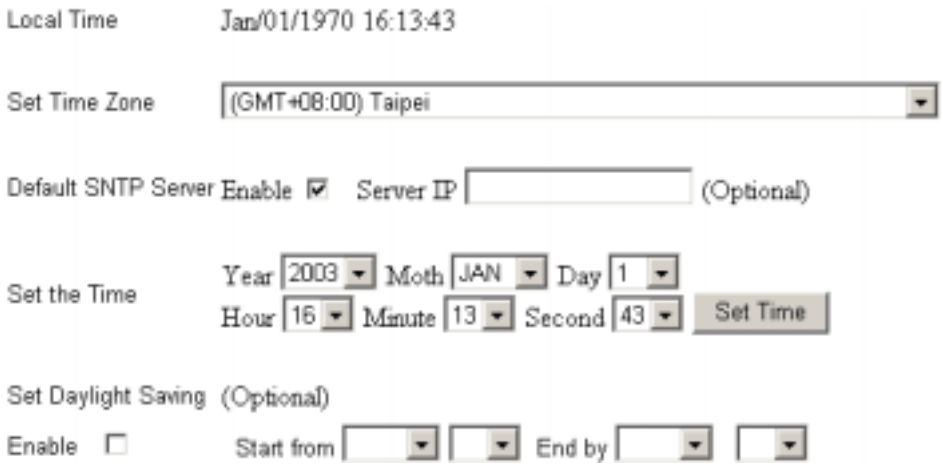
2-1 System

This page includes all the basic configuration tools for the Broadband Router. Point the selections in the left side of the menu screen.


Home
System Setting
This page includes all the basic configuration tools for the Broadband Router. The options are in the menu screen to the left.

2-1-1 System Time

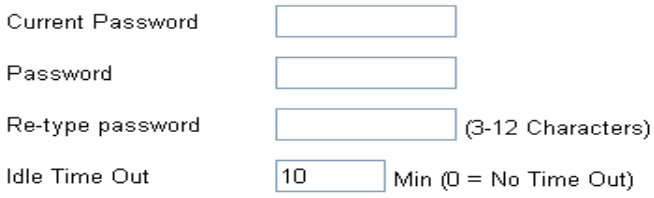
Connecting to a Simple Network Time Protocol (SNTP) server allows the Broadband Router to synchronize the system clock to the global Internet through the SNTP Server. The synchronized clock in the Broadband Router is used to record the system log and control client filtering.



2-1-2 Administrator Settings

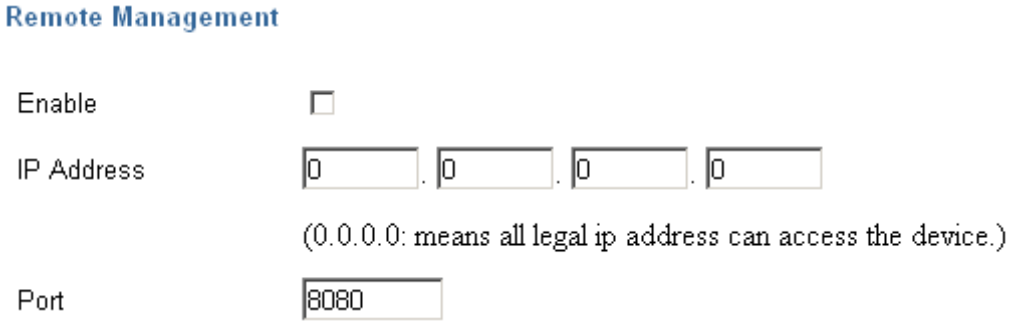
- Password Settings

Set a password to restrict management access to the Broadband Router.



- Remote Management from Internet

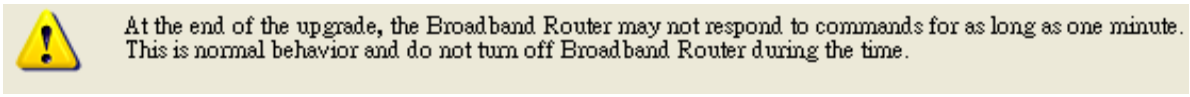
To manage the Broadband Router from a remote location (outside of the local network through WAN port), it must specify the IP address of the remote PC, otherwise, leave the IP address 0.0.0.0, means all legal IP address can access the device. The port which set to 8080 means the remote access port will set to 8080.

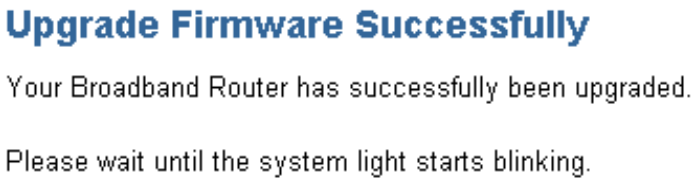


2-1-3 Firmware Upgrade

By upgrading a new firmware for the Wireless Broadband Router to improve functionality and performance. Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.

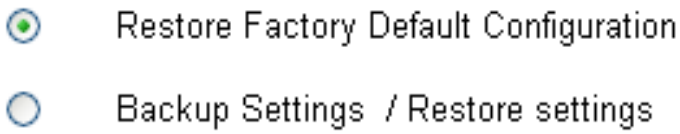
While updating the firmware, please wait after pressing the APPLY button, and follow the instruction on the screen, the System Light on the front panel will start blinking when the firmware upgraded successfully.


At the end of the upgrade, the Broadband Router may not respond to commands for as long as one minute.
This is normal behavior and do not turn off Broadband Router during the time.


Upgrade Firmware Successfully
Your Broadband Router has successfully been upgraded.
Please wait until the system light starts blinking.

2-1-4 Configuration Tools

Use the "Backup Settings" tool to save the Broadband Router's current configuration to a file named "config.bin" on your PC. You can then use the "Restore Settings" tool to restore the saved configuration of the Broadband Router that you set before. Alternately, you can use the "Restore to Factory Defaults" tool to force the Broadband Router to perform reset and restore the original factory settings.



- Restore Factory Default

  To restore the factory default settings of the Broadband Router, click on the “Restore” button.

- Backup Settings

  Press the “Backup Settings” button to save the current setting in a filed “config.bin” or given filename.

- Restore Settings

  To restore the backup file to the Broadband Router, enter the path and filename on the restore settings.

2-1-5 Status

Use the Status screen to see the connection status for the Wireless Broadband Routers' WAN, LAN, WLAN interfaces, firmware and hardware version numbers, and the number of connected clients to the network.

WAN

Connection Type	Dynamic IP
WAN IP	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
DNS	0.0.0.0
Secondary DNS	0.0.0.0

Release Renew

LAN

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
Firewall	Enabled

WLAN

SSID	Joe Test
Channel	13
Security(WEP)	No

INFORMATION

System Time	1970/01/01 00:07:07
System Boot Up Time	00000 days 00:07:08
Connected Clients	11
Runtime Code Version	V1.01.0795
Boot Code Version	V1.01.795
LAN MAC Address	56-49-54-41-4C-31
WAN MAC Address	56-49-54-41-4C-32

2-1-6 System Log

View any attempts that have been made to gain access to the network.

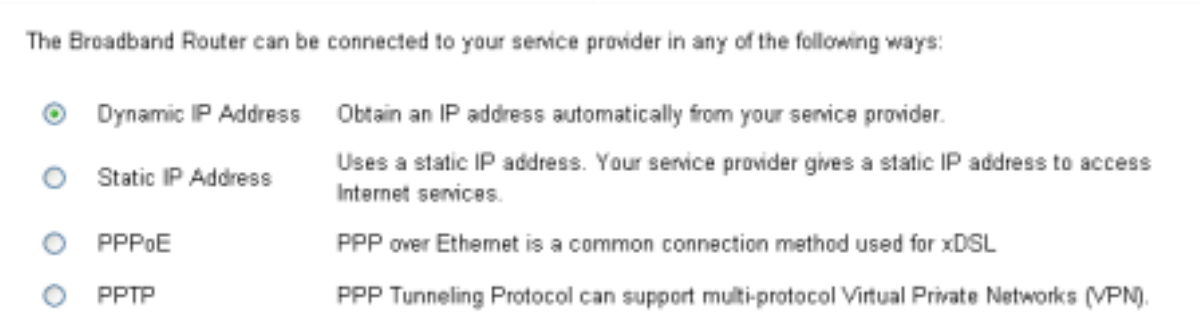
Log File
1970/01/01 00:06:12 : Next state= 1
1970/01/01 00:06:12 : Retransmit last message.
1970/01/01 00:06:12 : dhcp: timed out in WAIT_OFFER state.
1970/01/01 00:06:12 : dhcpc: Entered WAIT_OFFER state.
1970/01/01 00:05:09 : Next state= 1
1970/01/01 00:05:09 : Retransmit last message.
1970/01/01 00:05:09 : dhcp: timed out in WAIT_OFFER state.
1970/01/01 00:05:09 : dhcpc: Entered WAIT_OFFER state.
1970/01/01 00:04:06 : Next state= 1
1970/01/01 00:04:06 : Retransmit last message.
1970/01/01 00:04:06 : dhcp: timed out in WAIT_OFFER state.

2-1-7 Reset

In the event that the Broadband Router stops responding correctly or in some way stops functioning, perform the reset function. The settings will not be changed. To perform the reset, click on the "Reset" button. The reset will be complete when the system light starts blinking.

2-2 WAN

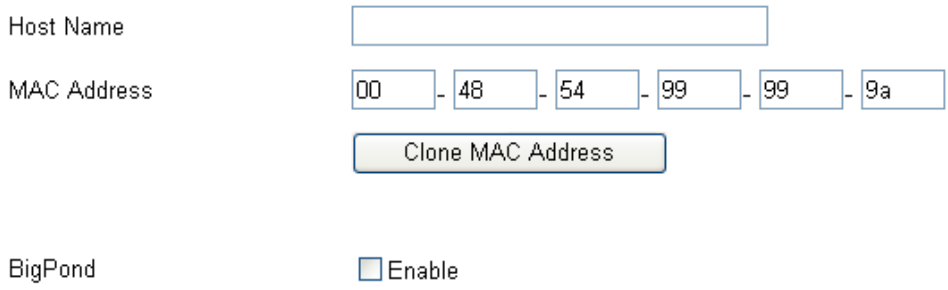
The Broadband Router can be connected to the service provider in any of the following ways: Dynamic IP Address, Static IP Address, PPPoE and PPTP.


The Broadband Router can be connected to your service provider in any of the following ways:
Dynamic IP Address
Obtain an IP address automatically from your service provider.
Static IP Address
Uses a static IP address. Your service provider gives a static IP address to access Internet services.
PPPoE
PPP over Ethernet is a common connection method used for xDSL.
PPTP
PPP Tunneling Protocol can support multi-protocol Virtual Private Networks (VPN).

2-2-1 Dynamic IP

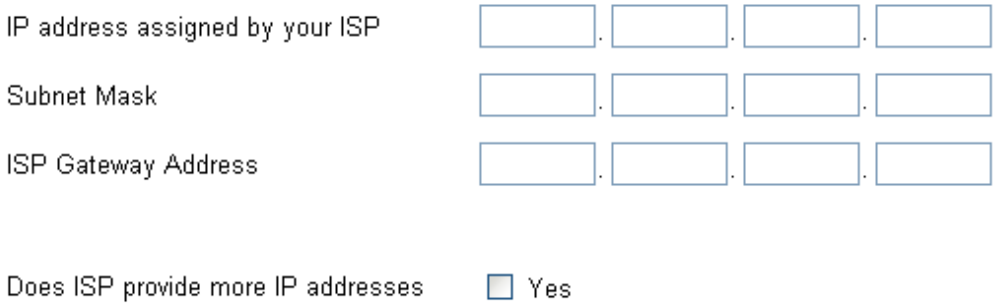
The Host Name is optional, but may be required by some Service Providers. The default MAC address is set to the WAN's physical interface on the Broadband Router. If the Service Provider requires the host name, using the "Clone MAC Address" button to copy the MAC address of the Network Interface Card installed in the selected PC and replaces the WAN MAC address with this MAC address.

The road runner management is optional. If the ISP needs to run the road runner management (sometimes called Big Pond), enable it.



2-2-2 Static IP

If the Service Provider has assigned a fixed IP address, enter the assigned IP address subnet mask and gateway address provided. Click “yes” if using two or more IP addresses.



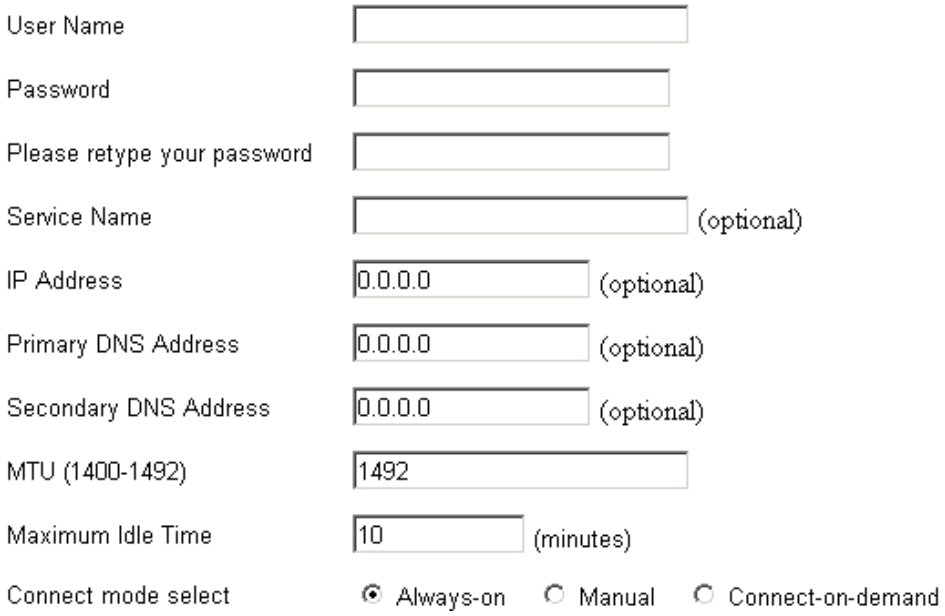
2-2-3 Dial-up xDSL (PPPoE)

If connected to the Internet using a Dial-up xDSL (PPPoE) Modem, the ISP will provide a Password and User Name, and then the ISP uses PPPoE. Choose this option and enter the required information, if the ISP provided a Service Name, enter it in the column of the Service Name field, otherwise, leave it blank.

The dialog box in Service Name, IP Address and DNS Address must be filled up when the ISP Provider provide these information to you, if the ISP Provider provides Dynamic IP Address, then you can skip on these dialog box.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1492. By default, MTU is set at 1492.

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). The Connect Mode Selection provide three function, Always on, Manual or Connect-on-demand button to dial up to the ISP when there is a demand needed, select the way of selection to meet the connecting to the ISP.

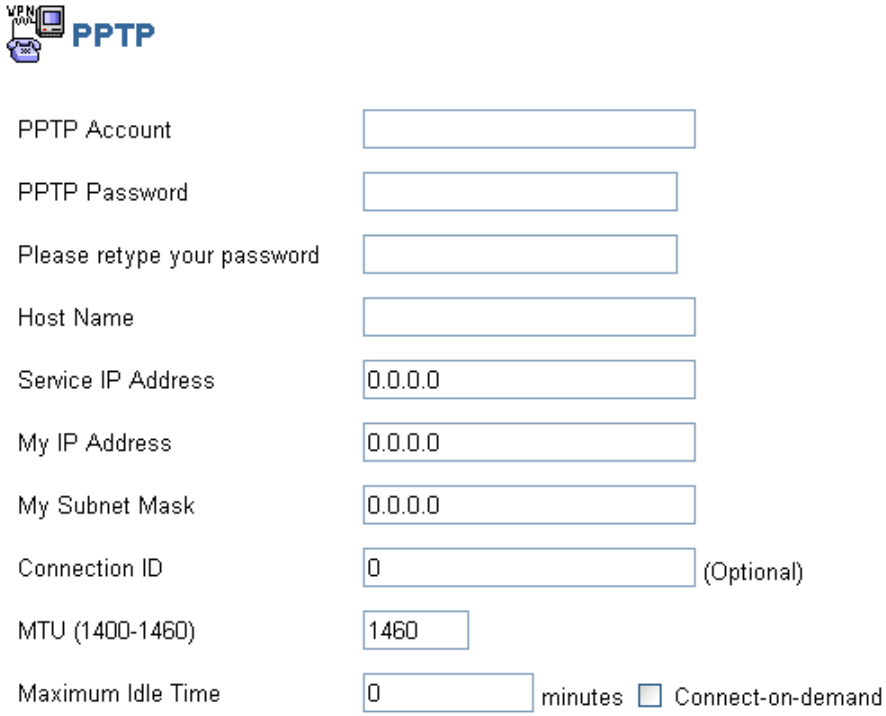


2-2-4 PPTP

If connected to the Internet using a (PPTP) xDSL Modem, enter the PPTP Account Name, PPTP Password, Host Name, Service IP Address, Your IP Address, Your Subnet Mask required by your ISP in the appropriate fields. If your ISP has provided you with a Connection ID, enter it in the Connection ID field, otherwise, leave it zero.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1460. By default, MTU is set at 1460

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

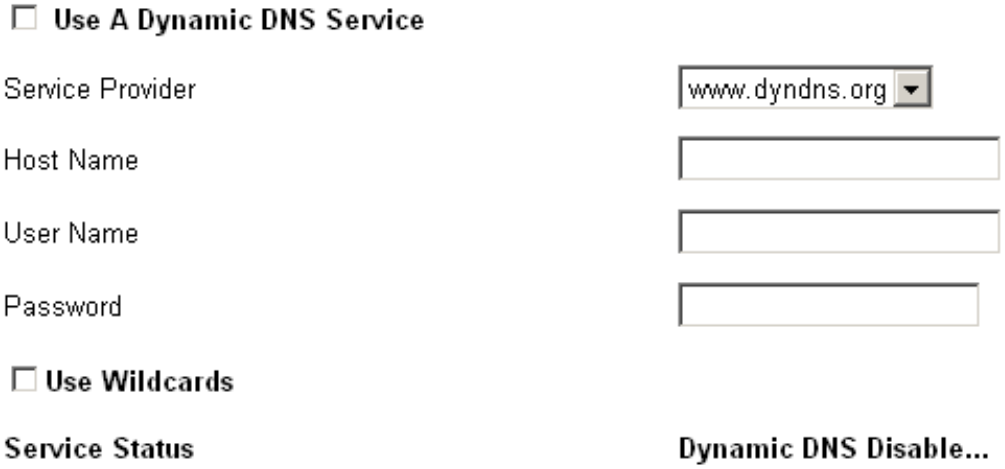


2-2-5 DNS

The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses.
If your ISP provided at least one DNS Server IP Address, type that **IP Address** in the Primary DNS address fields. You can type up to another DNS Server IP Addresses. The Router will utilize these for quicker access to functioning DNS Servers.

2-2-6 Dynamic DNS

Dynamic DNS (Domain Name Service) is a method of keeping a domain name linked to a changing (dynamic) IP address. With most Cable and DSL connections, you are assigned a dynamic IP address and that address is used only for the duration of that specific connection. With the device, you can setup your DDNS service and the device will automatically update your DDNS server every time it receives a different IP address.
You need to use the "Enable Wildcard" option, either in your client or in the web form. This will cause *.yourhostname.dyndns.org to point to the same IP address as yourhostname.dyndns.org.



2-3 LAN

Setting the LAN’s IP Address and DHCP Service.

2-3-1 LAN Settings

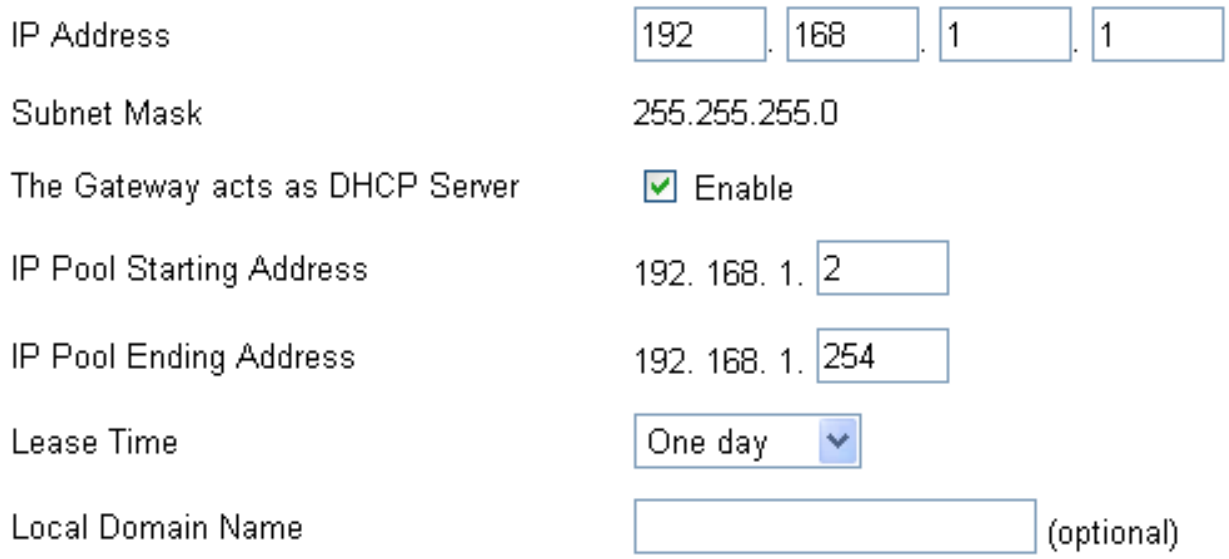
The default value is 192.168.1.1 for the IP address and 255.255.255.0 for the Subnet Mask. And you can also change the value for your needs.

To enable the DHCP server for dynamic IP address allocation to the clients PCs, click the “Enable”. The client can get the IP Addresses from a range from IP Pool Starting Address to IP Pool Ending Address; also, you can change the IP Pool range value.

The Lease Time is the amount of time a network user will be allowed connection to the Router with their current dynamic IP address. Enter the

amount of time, in hours, days or weeks, which the user will be “leased” this dynamic IP address.

You can enter your local domain name in the Local Domain Name fields.



2-3-2 DHCP Client List

The DHCP client list allows you to see which clients are connected to the Barricade via IP address, host name, and MAC address.

IP Address	Host Name	MAC Address
192.168.1.2	PM-NB	00-D0-59-08-0D-B8

Refresh

2-4 WLAN

To set the WLAN’s SSID, Regulatory Domain, Channel and WEP Encryption.

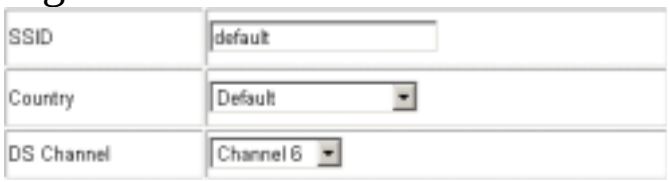
2-4-1 WLAN Setting

- SSID: The SSID differentiates one WLAN group name from another; so all access points and all devices attempting to connect to a specific WLAN group name must use the same SSID. A device will not be permitted to join the BSS unless it can provide the unique SSID.

- Country: this is the channel selection of each country regulatory domain, select the country where you are using this Wireless Broadband Router, users are responsible for ensuring that the channel set configuration is in compliance with the regulatory standards of these countries. The default setting of this Wireless Broadband Router is following the FCC rules using ***Channel 1~11***.

  Warning: ***Be noted that selecting the incorrect region may result in a violation of applicable law; you will need to select the correct domain.***

- DS Channel: It shows radio channel numbers that used for WLAN networking.



WEP Key Setting

While enabling the WEP Key Setting, the security of the Wireless Broadband Router will be activated, it will prevent unauthorized access to a wireless network.

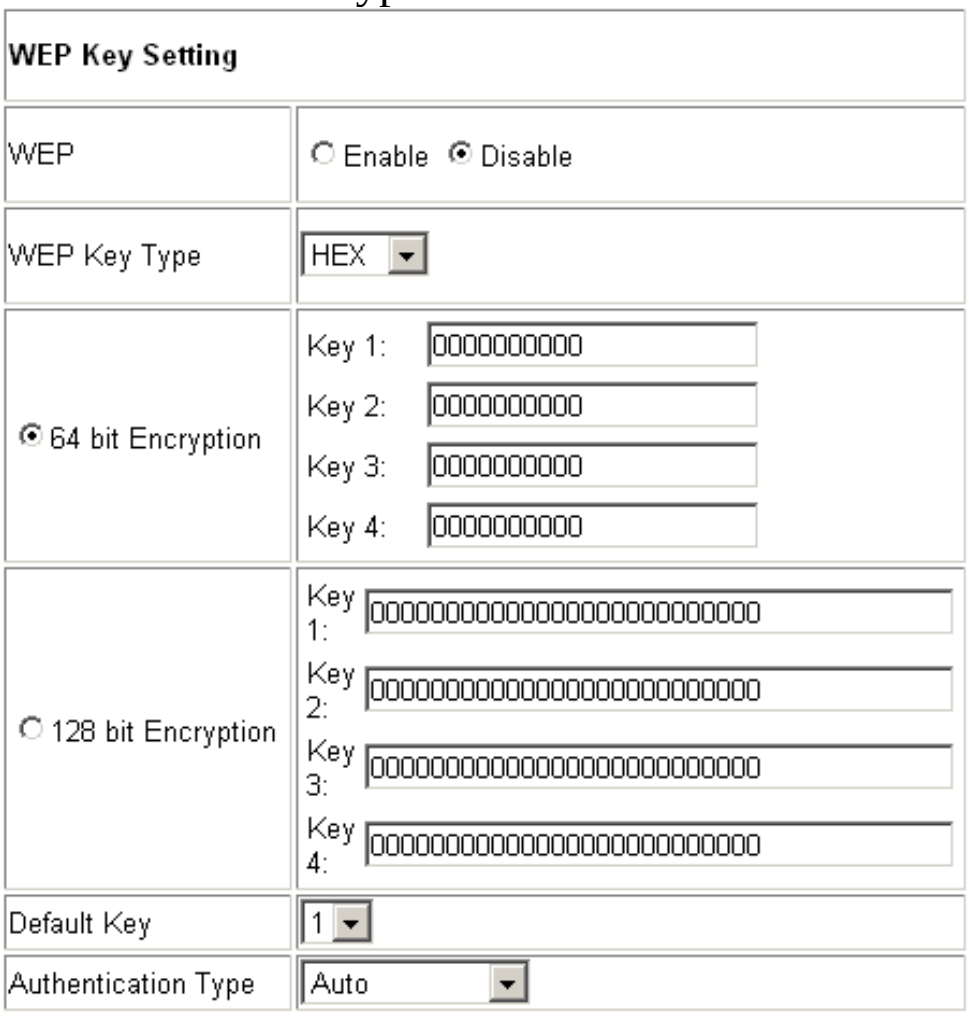
- WEP Key Type: selection of WEP key format using HEX type (hexadecimal 0~F) or ASCII type (alphanumeric 0~9, A~Z and a~z).
- 64 bit Encryption: when you select 64 bit encryption using HEX mode, you must type 10 values in the following range (0~F, hexadecimal) in key 1 to key 4, or 64bit in ASCII format, you must type 5 values in the following range (0~9, A~Z and a~z Alphanumeric).
- 128 bit Encryption: when you select 128 bit encryption, you must type 26 values in the following range (0~F, hexadecimal) in key 1 to key 4, or 128bit in ASCII format, you must type 13 values in the following range (0~9, A~Z and a~z Alphanumeric).
- Default Key: select the default key that you want to use in this Wireless Broadband Router.

- Authentication Type:

Open System: with the same WEP key between the stations, the stations don't need to be authenticated, and this algorithm is mostly used.

Shared Key: with the same WEP key between the stations in this Authentication algorithm, this type will use packets with encryption by transferring a challenge text which will be acknowledge by both side of the stations.

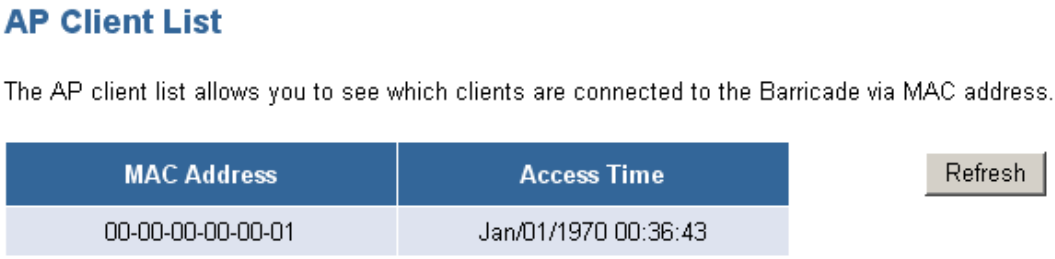
Auto: by selecting this auto mode, the system will automatically select which authentication type is suitable for the WLAN networking.



2-4-2 AP Client List

The AP client list allows you to see which clients are connected to this Wireless Broadband Router via MAC address.

Use “Refresh” button to display the new list of the connected clients


AP Client List
The AP client list allows you to see which clients are connected to the Barricade via MAC address.
MAC Address
Access Time
00-00-00-00-00-01
Jan/01/1970 00:36:43
Refresh

2-5 NAT

Network Address Translation (NAT) allows multiple users at the local site to access the Internet through a single public IP address. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.

2-5-1 Special Application

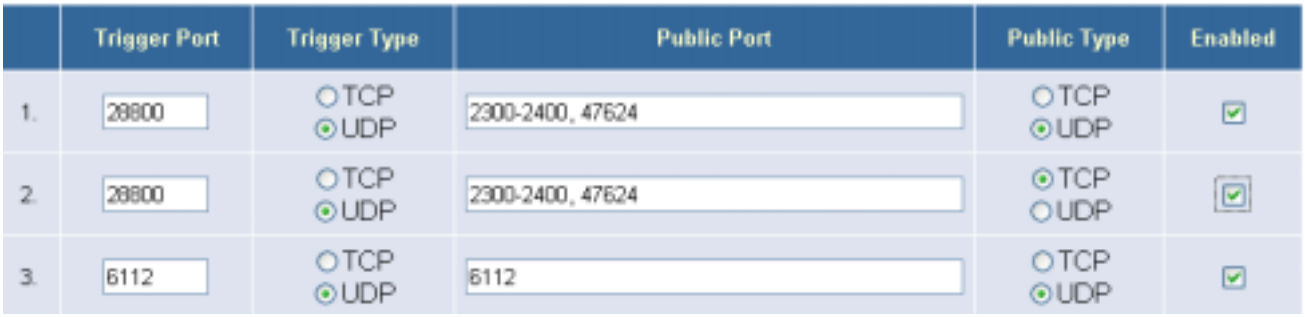
Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. When users send this type of request to your network via the Internet, the Router will forward those requests to the appropriate PC. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

- **TCP (**Transmission Control Protocol) - A method (protocol) used along with the Internet Protocol (Internet Protocol) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

- **UDP (**User Datagram Protocol) - A communications method (protocol) that offers a limited amount of service when messages are exchanged between computers in a network that uses the Internet Protocol (IP). UDP is an alternative to the TCP and, together with IP, is sometimes referred to as UDP/IP. Like the Transmission Control Protocol, UDP uses the Internet Protocol to actually get a data unit (called a datagram) from one computer to another. Unlike TCP, however, UDP does not provide the service of dividing a message into packets (datagrams) and reassembling it at the other end. Specifically, UDP doesn't provide sequencing of the packets that the data arrives in. This means that the application program that uses UDP must be able to make sure that the entire message has arrived and is in the right order. Network applications that want to save processing time because they have very small data units to exchange (and therefore very little message reassembling to do) may prefer UDP to TCP.

Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	28800	UDP	2300-2400, 47624	UDP	MSN Game Zone
2	28800	UDP	2300-2400, 47624	TCP	MSN Game Zone
3	6112	UDP	6112	UDP	Battle.net

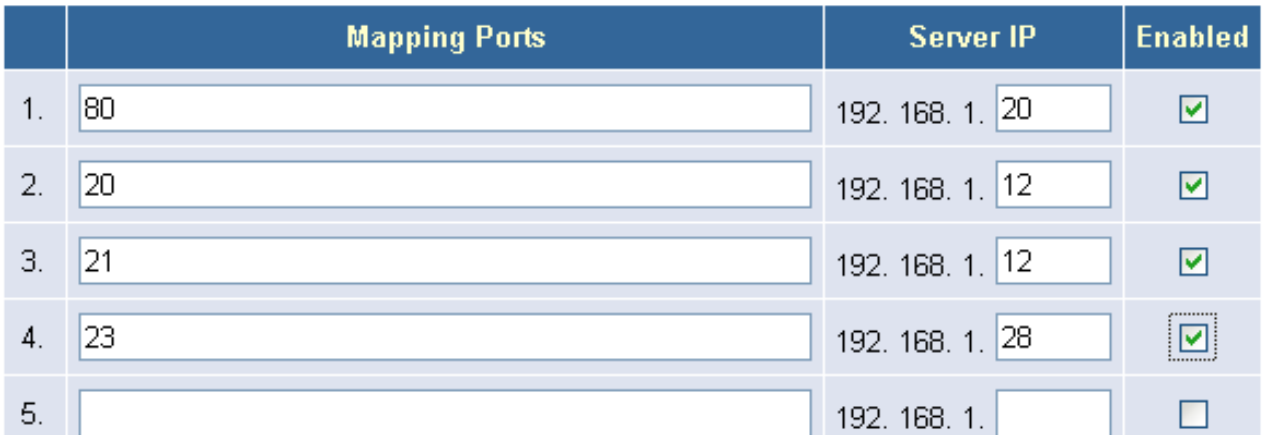


2-5-2 Virtual Server

Configure the Broadband Router as a virtual server to allow the Router to watch outgoing data for specific port numbers. The IP address of the computer that sends the matching data is remembered by the Router, so that when the requested data returns through the Router, the data is pulled back to the proper computer by way of IP address and port mapping rules such as the Web or FTP at the local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Broadband Router redirects the external service request to the appropriate server.

Example:

ID	Server IP	Mapping Port	Type	Comment
1	192.168.2.20	80	TCP	Web Server
2	192.168.2.12	20	TCP	FTP Server
3	192.168.2.12	21	TCP	FTP Server
4	192.168.2.28	23	TCP	Telnet Server



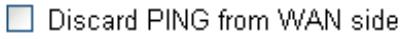
2-6 Firewall

The Broadband Router provides extensive firewall protection by restricting connection parameters to limit the risk of hacker attack, and defending against a wide array of common hacker attacks.

The Broadband Router provides packet filtering rules by restricting service ports, IP address or MAC address. However, for applications that require unrestricted access to the Internet, configure a specific client/server as a demilitarized zone (DMZ).

2-6-1 Block WAN Ping

When the "Block WAN Ping" activated, it is causing the public WAN IP address on the Broadband Router not to respond to ping commands. Pinging public WAN IP addresses is a common method used by hackers to test whether the WAN IP address is valid and supports a network.



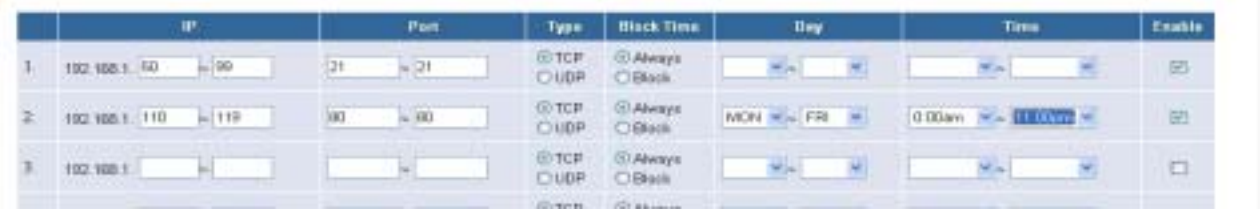
2-6-2 Client Filtering

To block a certain client PCs accessing the Internet based on time.

You can filter Internet access for local clients based on IP addresses, application types, (i.e., HTTP port), and time of day.

For example, this screen shows that clients in the address range 192.168.2.50-99 are permanently restricted from using FTP (Port 21), while clients in the address range 192.168.2.110-119 are blocked from browsing the Internet (port 80) from Monday to Friday and from 0:00AM to 11:00 PM.

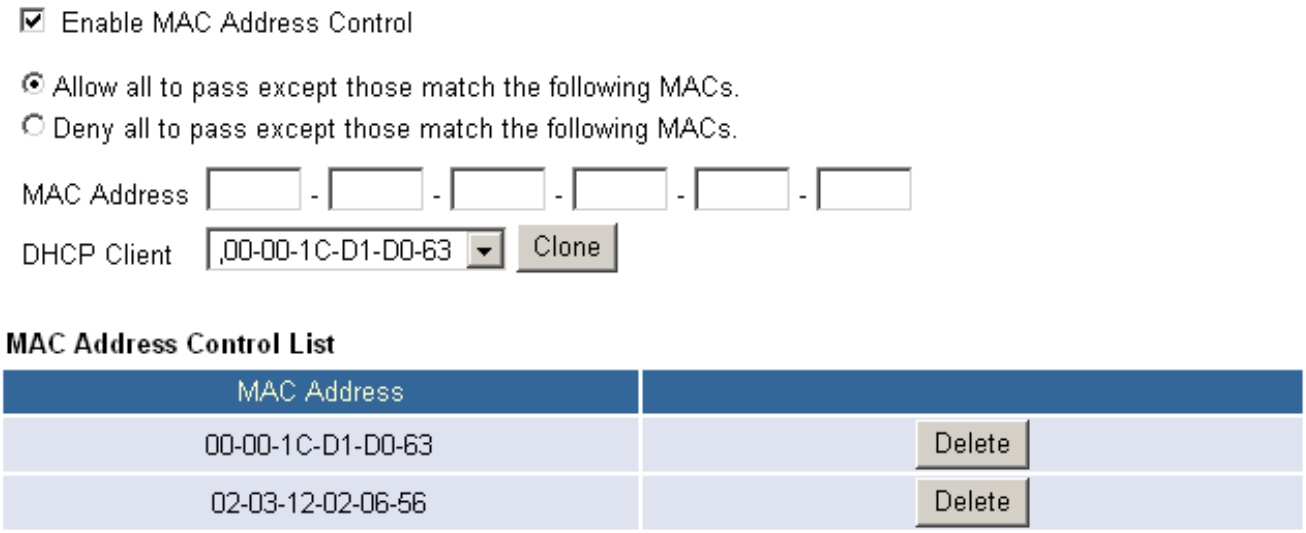
Example:



2-6-3 MAC Control

You can block certain client PCs accessing the Internet based on MAC addresses.

Choose the DHCP Client's MAC Addresses to block certain PC, and it will list out the chosen MAC Address in the MAC Address Control List.



2-6-4 DMZ (Demilitarized Zone)

If a local client PC cannot run an Internet application properly from behind the NAT firewall, open the client up to unrestricted two-way Internet access by defining a virtual DMZ Host.

TECHNICAL SPECIFICATIONS

General	
Standards	IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.11b
Protocol	CSMA/CD
Radio Technology	IEEE 802.11b Direct Sequence Spread Spectrum (DSSS)
Data Transfer Rate	WLAN: 1, 2, 5.5, 11Mbps (auto sense) Ethernet: 10Mbps (half duplex), 20Mbps (full-duplex) Fast Ethernet: 100Mbps (half duplex), 200Mbps (full- duplex)
Topology	Star
Receiver Sensitivity	11Mbps: Typical –83dBm @ 8% PER (Packet Error Rate) 2Mbps: Typical –84dBm @ 8% PER (Packet Error Rate)
TX Power	Minimum 13dBm typically
Network Cables	10BASE-T: 2-pair UTP Cat. 3,4,5 (100 m), EIA/TIA- 568 100-ohm STP (100 m) 100BASE-TX: 2-pair UTP Cat. 5 (100 m), EIA/TIA-568 100-ohm STP (100 m)
Frequency Range	2400 ~ 2497 MHz ISM band (channels 1 ~ 14)
Modulation Schemes	DBPSK/DQPSK/CCK
Security	64/128-bits WEP Encryption
Channels	1 ~ 11 channels (FCC); 1 ~ 13 channels (ETSI); 1 ~ 14 channels (Japan)
Number of Ports	LAN: 4 x 10/100Mbps Auto-MDIX Fast Ethernet port WAN: 1 x 10/100Mbps Auto-MDIX Fast Ethernet port

Physical and Environmental	
DC inputs	DC 7.5V 1A
Power Consumption	3W (Max)
Temperature	Operating: 0° ~ 40° C, Storage: -10° ~ 70° C
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Dimensions	171 x 100 x 34 mm (W x H x D) without Antenna
EMI:	FCC Class B, CE Mark B